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12 December 1979

Worldwide Report

ENVIRONMENTAL QUALITY

(FOUO 10/79)



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USSR

GEOGRAPHICAL ASPECTS OF NATURAL-RESOURCE USE

Moscow VOPROSY GEOGRAFI. SBORNIK 108, PRIRODOPOL'ZOVANIYE (GEOGRAFICHESKIYE ASPEKTY) [Questions of Geography. Collection 108, Utilizing National Resources (Geographic Aspects)] 1978 signed to press 11 Oct 78 in Russian pp 6, 9-10; in English pp 11-12, 194-215

[Annotation, introduction, table of contents and abstracts of articles from book edited by Yu. K. Yefremov and S. L. Vendrov, "Mysl'" Publishing House, 215 pages, 6100 copies]

[Text] This collection includes an examination of general problems as well as scientific-organizational, methodical, field-related aspects and regional aspects of utilizing natural resources. Issues concerning the reconstruction of nature, averting its negative consequences, and preservation of the environment are discussed.

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Introduction

The term "nature management" is coming into increasingly broader use both in the scientific literature and in journalism and in oral speech. It has entered juridical terminology and into the structure and title of subdivisions of government departments and institutes (for example, "Division of Nature Management and Environmental Protection in the State Committee on Science and Technology USSR Council of Ministers" and "Section on the Economics of Nature Management" in the Central Economics-Mathematical Institute USSR Academy of Sciences). All this makes necessary an unambiguous interpretation of the term "nature management."

The understanding of nature management employed by Yu. N. Burazhskovskiy (1959) in a restricted, primarily ecological-biological sense for a long time remained somewhat indefinite and sometimes was also interpreted contradictorily. A stabilization of its unambiguous meaning was undertaken in the 3d edition of the Large Soviet Encyclopedia in the articles "Earth" (Vol 9, 1972) and "Nature Management" (Vol 20, 1975), in which this term was clearly defined as combining all aspects of man's influence on nature, including its preservation, exploitation and transformation.

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Such an understanding of nature management was also reflected in a report by a group of authors at the 6th Congress of the USSR Geographical Society in Tbilisi (Gvozdet'skiy, Yefremov, Isachenko, Kogay, Preobrazhenskiy, Ukleba, 1975) and an article by Yu. K. Yefremov (1976) in the collection of articles AKTUAL'NYE NAPRAVLENIYA SOVETSKOY GEOGRAFI (Present Directions in Soviet Geography), published by the Moscow Affiliate of the USSR Geographical Society for the 23d International Geographical Congress.

The increasing need for comparison, coordination and refinement of theoretical and practical problems in nature management encouraged a group of Moscow geographers to present current interpretations of these problems in this new collection of articles and to give a unified picture of some of the existing concepts, disagreements and trends. They selected the most timely aspects of the problem and constructive proposals and decisions, most of which have already undergone public discussion at the Moscow Affiliate of the USSR Geographical Society. The editors hope that such a comparison of points of view and trends will help in their collation, coordination and consolidation into a unified productive concept.

In the structure of this collection of articles the reader will find reflection of general problems relating to nature management and also its scientific-organizational, methodological, branch and regional aspects. Among the general problems there is a discussion of the relationship of geographical-environmental and socioeconomic aspects of nature management. The need for a multi-sided ecological-economic approach to solution of this problem is asserted. In the examination of the relationship between the concepts of nature management and the transformation of nature it is mentioned that it is necessary to prevent such transformations which could cause a deterioration of natural conditions. The problems involved in geoengineering systems and resource study, in particular global energy aspects of nature management, are discussed.

Direct bridges from theory to practice are presented in articles on the scientific-organizational and methodological aspects of control of environmental quality. Among such aspects of nature management the collection of articles covers the problems involved in environmental monitoring, studies of the earth from space, the program-purposive approach, global and regional modeling, long-range forecasts, role of nature management in regional planning, improvement in the organization of the control of nature management on a national scale.

Among the branch aspects of nature management the most timely are deemed to be recultivation, protection of soil and water, and recreational. Some methodologically interesting solutions are given in specific regional examples. In the interpretation of individual aspects of the discussed problems in nature management the authors of the articles present ideas which may be regarded as debatable. This pertains, for example, to the explanation of some processes of a global character and to problems relating to evaluation of natural resources and control of natural conditions.

The editors of this collection of articles did not consider it desirable to supply any commentaries on individual articles, assuming that at the

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present stage in discussion of these problems a broad exchange of different opinions will be useful.

The outstanding geographer David L'vovich Armand, who died in 1976, played a very important role in developing the theory and practice of nature management. A debt of our respect for his memory and services is the publication of one of the last articles by D. L. Armand, having a direct bearing on the subject matter of this collection of articles.

We dedicate this book to the memory of D. L. Armand.

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ABSTRACTS OF ARTICLES

Man's Goals Related to Nature Transformation (D. L. Armand)

Two problems are under discussion--first--the importance of maintaining the oxygen and carbon dioxide content in the atmosphere at an ecologically optimal level, and the need to provide a global balance of their utilization and accumulation.

The second problem--the role of the animal kingdom in the general process of metabolism and in bionics from its ethical point of view. Additional measures are proposed to preserve wildlife.

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Nature Transformation as an Ingredient of Nature Management (Yu. K. Yefremov)

An overview of works of Soviet Scholars dealing with problems of preserving and transforming nature that were published during the last 25 years is given in the work. Different aspects of these problems and ways to cope with them are considered. The transformations are classified into casual and deliberate ones, extensive and prolonged. An economic-ecologic estimation of nature transformations is provided to be necessary; it is suggested to study not only meliorating but also harmful effects and the means to prevent the latter. The nature protection from the excessive and deteriorative transformations is a component of rational nature management, which becomes a natural-social, i.e. general geographical science studying the nature management by the man.

Environment Pollution and Nature Management (A. M. Ryabchikov, Yu. G. Yermakov)

The term "pollution" of the environment is defined. Shortcomings of technical approaches to the prevention of environment pollution are discussed with the help of some examples. Possibilities of wider use of the geosphere self-purification potential are analyzed. Some geosystems are described, which are not only extremely pollution-resistant, but prove to be good "purification installations". It is suggested to develop such anthropogenic geosystems that would be highly stable and would have greater possibilities for biological purification than the natural ones.

Energy Aspect of the Global Nature Management (N. M. Svatkov)

The combustion of carbonic fuel raises the CO₂ concentration in the atmosphere, there is no economic or technical possibilities up to the end of our century for the substitution of carbon, as a basis of global energetics, by other substances; this situation in its general outline will pass into the next century. Intensive use of carbonic fuel caused a stable abnormal warming of the Earth registered by direct observations. This warming will develop, and to the middle of the XXI century it will produce a shift in the environment conditions, so that they will be the same as in the Vikings time. In order to avoid undesirable consequences or the continuous warming other sources of energy should be used, and the energy production should be concentrated in areas with the lowest contra-radiation of the atmosphere.

On the Social Aspects of Nature Management (V. S. Preobrazhensky)

The impact on nature is realized by man, utilizing its wealth for various purposes, both industrial and non-industrial ones. Therefore, the nature management should be rational, so that a maximum social total effect may be achieved--economic and non-economic (hygienic, aesthetical, etc.). Consequently, problems of nature management require joint efforts of various specialists in natural, social and technical sciences for their fruitful solution.

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The Place of Resource Science in the System of Knowledge on Nature Management (T. G. Runova)

The place of geographical resource science in the developing scientific field--nature management science is discussed; a classification of human activities by their impact on nature is suggested; the participation of resource science studies in the solution of the problem of nature management optimization is estimated. Results of resource science investigations of the dynamical processes and areal aspects of nature management are communicated. These processes and aspects may be referred to the field of nature exploitation being, in the same time, an object of geographical resource science.

The Development of Geotechnical System Concept (K. N. Dyakonov)

The basic features of the geotechnical system notion, which is the base of the GTS concept, are considered. The most important contribution to the development of the concept was made by G. F. Hilmi, I. P. Gerasimov, V. S. Preobrazhensky, A. Yu. Reteyum, I. R. Spector. Investigations of the large reservoirs impact on the adjacent areas are shown to be important for the development of the theory. Research works with similar theoretical basis are realized also by geologists, biologists, soil meliorators and agronomists.

Monitoring of the State and Regulating of the Natural Environment Quality (Yu. A. Izrael)

Monitoring of the natural environment state is described as well as its role in the environment quality regulation strategy. Monitoring means observation and regulation of the man-induced changes in the natural environment; monitoring of the atmosphere pollution is a special branch of monitoring. The scheme of monitoring is considered together with its ingredients--observation blocks, estimation and forecast of natural environment state. The latter is estimated with the help of permissible values of impact factors and of ecological pressure on the environment. The realization of monitoring schemes in the USSR as a part of state survey on the pollution level is described.

Nature Management and Cosmic Geography (E. A. Vostokova, A. D. Koval, L. A. Shevchenko)

Rational nature management requires special cartographic data on the location and present state of natural resources. Such new data are obtained with the help of cosmic photos decyphering and a series of thematic maps. The latter includes: a series of maps of natural potential, maps of the present state of the environment, including land use, anthropogenic changes of the entire landscape or of its components, unfavourable consequences of human activities (anthropogenically induced exogenic processes), etc. The series of maps reflecting the present state of the environment should be

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periodically renovated or constant observations should be organized on especially important objects; it seems possible only with the help of cosmic information. Only then the effective control over the environment state will be realistic as well as measures aimed at the environment protection and rational utilization.

Program-Purposive Approach to the Rationalization of Nature Management
(M. Ya. Lemeshev)

Social economic peculiarities of planning and management of nature management processes under developed socialism conditions are the main themes of the article. Taking into account the complex character of the discussed problem, the author considers the necessity of a long-term program of the environment protection and of rational utilization of natural resources. The structure of this program is suggested as well as a system of criteria for the solution of concrete tasks of rational nature management.

Estimation of Various Ways of Nature Management in Global Models
(Yu. G. Lipets)

The application of systems dynamics methods and possibility of analyzing supercomplex hierarchic systems led to the growth of the popularity of global modelling.

Different approaches of foreign authors concerning the solution of nature management problems by means of global models are considered and critically analyzed. A different approach of Soviet scientists to global modelling is noted.

The Fundamentals of the Long-Term Forecast of the Environment State
(K. G. Gofman)

Structure and methodological principles of the long-term forecast of the natural environment state are considered. A method of forecast of the atmosphere state parameters in regions with intensive industrial development and traffic is suggested and illustrated by the experience of the air pollution prediction. These parameters meet both the demands of social-hygienic standards and the requirements of industry and non-industrial development in a certain time period.

Nature Management and Regional Planning (E. N. Pertsik)

Solutions of a number of serious problems, existing in nature management are shown to be found within the limits of regional planning due to combination of geographic and planning approaches. Problems of the area rating in regional planning and of the management of planning systems development are analyzed from the viewpoint of rational nature utilization.

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Some Considerations on the Problem "Water and Nature Management"
(S. L. Vendrov)

This paper's goal is to present the links between the modern problems of water management with a complex of tasks of rational nature management, including that of the environment protection. Possibilities and requirements to the forms and scales of river valleys transformations are shown to regularly change in time. The present day economic plans and tactic solutions are to be reasonably correlated with the long-term economic and ecologic planning, although they may not only be different, but even contradictory. In future the combination of the growing intensity of water resources utilization with the possible limitations of the impact on nature and strict economic and ecologic control on water consumption must become still more accurate.

An Experience of Economic Analysis Applied to the Economically Balanced Nature Management Structure (Water Resources of the Don River as Example)
(S. G. Zhukov)

Principles of the economic analysis of the regional nature management processes are discussed with the help of a river basin example. First a general cybernetic scheme of water consumption by an agricultural coenosis is considered, then follow separate processes induced by the operator transforming the system. Using the principles of economic analysis the author demonstrates the specific way of possible solutions choice in the scheme of nature management processes.

Soil-Geochemical Regionalizing of the Non-Chernozemic Zone Aimed at the Soil Protection Against Pollution (M. A. Glazovskaya)

Soils display different resistance to the impact of technogenic mineral and organic substances. It depends on the soil hydrothermic regime, oxydation-reduction processes, pH conditions, sorption potential, initial content of biochemically active microelements and on the place of the soil in the local geochemical landscape. All these properties served a basis for a scheme of soil--geochemical regionalizing compiled for the Non-Chernozemic zone.

Goals of Land Recultivation in the Reproduction of Exploited Natural Resources (L. V. Motorina)

The growing impact of the modern powerful technique on the nature complexes results in formation of natural-technogenic landscapes. The land recultivation should be regarded as an ingredient of the general system of technogenic landscapes reconstruction and optimization. Basic trends in land recultivation and its most urgent tasks are assessed. The importance of landscape ecologic investigations is emphasized as well as the necessity to join the efforts for solution of this complicated problem.

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Nature Management and Reservation (N. F. Reymers)

Stages of interrelations between nature's potential and the productive forces--form of a dynamic process within the socioecological system are defined and analyzed. Changes of the role of "passive" forms of protecting nature (primarily reserves) in the course of economic activities are considered against the background of these historical relations. It is pointed out that the ecological equilibrium is maintained on the basis of elemental, functional-component and territorial-systems balance.

National Parks of RSFSR (A. V. Dobrov, V. P. Chizhova)

The problem of National Parks (NP) organization in the Russian Federal Republic is discussed. Reserves (zapovedniki), natural and national parks are defined basing upon their goals and location; differences between these three notions are emphasized. A project of a Middle Urals NP serves an illustration, it is supplemented by two schemes: functional zoning of the reserve and landscape-recreational estimation of its future zone for people rest.

Recreational Nature Management (B. N. Likhanov)

An intensive development of nature management in recent years poses a number of problems. Theoretical fundamentals of recreation geography are elaborated, which evolved from the concepts of the areal recreation system. Functional typology of recreational nature management is suggested. Notion of recreational resources and conditions are considered, as well as that of resistance and volume of natural complexes. Basic tendencies in recreational activity and in nature protection by recreational nature management are revealed. It is suggested to organize an administrative body to manage the recreation economy.

Architectural and Planning Aspects of Nature Management at the Example of Moscow District Experience (Yu. D. Fedorov, I. P. Chalaya)

Problems of nature management are discussed in relation to architecture-planning projects. Three aspects of these problems may be distinguished: 1) an analysis of natural conditions and resources for elaboration of rational nature management which serves a basis for the forecast, planning organization and urban regionalization; 2) sanitary problems of the environment protection; 3) aesthetical problems of urban building and areal interrelationships of the city and its elements with the natural surrounding. The schemes of urban zoning and planning of Moscow district are given as examples of correlation between the nature management problems and architecture-planning designs.

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D. L. Armand's Works in the Field of Nature Management (Yu. K. Yufremov)

The outstanding Soviet geographer D. L. Armand was among the first, who worked out the modern scientific basis of rational nature management. Extensive field investigations gave him the possibility to create an important work on the physico-geographical principles of design of the protective forest belts network; in collaboration with other scientists he prepared a fundamental book on the natural resources of our country. His monograph "Landscape science" is highly appreciated by geographers. David Lvovich was a popularizer of knowledge about nature.

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EXTENT, HEALTH HAZARDS OF AIR POLLUTION EXAMINED

Hamburg STERN in German 6 Sep 79 pp 33-38, 296

[Report by Emanuel Eckardt: "Then We Cannot Breathe"]

[Text] Every 20 days in the FRG, we learn of a severe polluting of the environment. Nobody can count the mild cases any more. Our "fresh air" has become a dirty mixture composed of all the poisonous chemicals: Cars, factory smokestacks, and chimneys fill our lungs full of smoke. And the government sleeps. When a cement works in Muensterland poisoned people and animals last week, it was acting within the framework of the law.

"As Long as There Is No Sensible Law, Such Things Will Happen Again and Again"

First the sheep died. "Their lungs were spotted and their kidneys were pitch-black" farmer Stefan Thauer discovered, after he had been forced to have the animals slaughtered. Then it got the fruit trees: They put forth no leaves and bore no fruit. And then the mother ate some of the home-grown cabbage and collapsed with convulsions.

The farmers of Lengerich in Muensterland have known the reason for these things since last week: For years, the neighboring cement works had poured out thallium along with the factory dust through its chimney stack. Day after day, the poisonous heavy metal made its way into the open air along with the dust, a kilogram per hour. Whoever eats two grams of it dies. Thallium, a well-tested poison for rats and spouses, is famous in the whodunit, because numerous murders have been committed with it since the 19th century. "There is no danger to health whatsoever...if one lets the vegetables stay in the freezer a sufficient length of time, the whole matter is not so melodramatic," nevertheless declared administrative district president Schleberger in Munich, when the Land Institute for Nuisance Protection had discovered the poison in the country surrounding the Dyckerhoff cement works.

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Meanwhile, thallium has also been found in the vicinity of the Bavarian cement works at Lengfurt. "But one does not need to be surprised at that," angrily stated Peter Menke-Glueckert, department head in the Federal Ministry of the Interior: "As long as there is no sensible law for environmental chemicals, as long as cement factories or zinc works are allowed to contaminate the environment with their wastes, as long as these factories are not made to keep the dust they produce under their own roof, such incidents will happen again and again!"

In fact, the thallium scandal shows that environmental legislation is limping along behind the events, because according to the prevailing limits set by the "Air Engineering Manual" of 1974, the thallium discharge of the Lengerich factory was permissible. At 5 milligrams per kilogram of smoke, it was far below the prohibition threshold of 20 milligrams.

But what surprised the Land governments of North Rhine-Westphalia and Bavaria: Over the years, this poison accumulates in plants and animals, and probably in humans as well, so as to make higher and higher concentrations. The thallium affair is the 15th major environmental scandal of 1979--a new example of the destruction of our natural foundations of life. One of these foundations is air, of which we--whether we want to or not--must inhale 10,000 liters every day.

Is there a more beautiful dream than to escape from the mustiness of the office buildings and the dust of the factories, so as to work in fresh air, under the open sky--to live like a gardener?

But gardeners of all people, a study group at the Ruhr University in Bochum found, are threatened the most by lung cancer--if they live in cities. Their risk of dying from this cause is four times higher than for miners, eight times higher than for smokers: A consequence of staying too long in that gaseous mixture enriched with pollutants, fibers, and dust particles containing heavy metals which is still called "fresh air."

The diseased lungs of the gardeners are the price they must pay for the thick air in the 1950's. Because lung cancer needs 25 to 30 years before its destructive growth becomes apparent. With other high-risk groups which have to work in the cities in the "fresh air," and thus largely in automobile exhaust gases, the number of lung cancer cases is greater than average as well. This is true for traffic policemen just as much as for professional drivers. And the number of lung cancer illnesses in the FRG is increasing without let-up.

In this connection, it was precisely the filth in the air which alarmed the first environmentalists. And in the Ruhr region, where it stank to high heaven the most, an election campaign was already being conducted in the 1960's with the slogan "A Blue Sky Over the Ruhr."

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Since that time, the requirements with respect to technical installations have been sharpened constantly, the chimney stacks have become higher and higher, and in coking plants and factories, expensive filter equipment has had to be installed. The result: Whereas in the early 1960's there were still 2.6 million tons of dust particles darkening the sun in the FRG, today less than half that amount rains down.

The Federal Government landed a blow with its leaded-gasoline law, which has set international standards despite a fierce countermovement by the automobile lobby and the ADAC [General German Automobile Club]. The prophesied death of motor vehicles did not take place, and threatened nature is now being adversely affected by only a fraction of the former lead residues. Thus in 1976 in Frankfurt, the city with the most cars per resident, lead concentrations were measured to be at a level which they were formerly only on automobile-free Sundays during the oil crisis. This is not a reason for breathing freely. Because instead of this, there are new substances whose hazardousness has not yet been researched in some cases. They are not mentioned in any law on the prevention of air pollution.

More than 500 different substances and compounds are floating in the air we breathe: Heavy metals such as lead, zinc, and cadmium, which at present are being emitted to the environment in such quantities that in 300 years there will not be a square meter of German soil left on which agricultural products can still be grown. The air we breathe has suspended in it carcinogenic substances--such as benzopyrene, the substance which is generated with every combustion, in cigarettes and at the grill, in blast furnaces and in the fireplace, 300 times more at Gelsenkirchen than in the Black Forest. Floating in the air we breathe are asbestos fibers, which are released by the abrading of brake linings and in connection with the fabrication of pipes, partition panels, and floor coverings, and which are already held responsible by American scientists for 14 percent of all cases of cancer.

The Institute for Air Pollution Control and Silicosis Research at Duesseldorf has counted 10,000 to 100,000 asbestos fibers per cubic meter of city air. Professor Hans-Werner Schlipkoeter, head of the institute: "Today, we can rather precisely diagnose from the clinical picture of the lung cancer whether it has arisen through inhalation of fibers or, for example, through smoking." The fiber-caused cases are increasing.

The great differences among large cities, especially between the 24 industrial centers which have been identified as pollution-prone districts* and those natural reserves which have been laid aside and

*Aschaffenburg, Augsburg, Burghausen, Erlange--Fuerth-Nuernberg, Ingolstadt-Neustadt-Kelheim, Munich, Regensburg, Wuerzburg, West Berlin (entire municipal area), Lower Main, Rhine-Main, Wetzlar, Kassel, Rhine Railway South, Rhine Railway Middle, Ruhr District West, Ruhr District Middle, Ruhr District East, Ludwigshafen-Frankenthal, Mainz-Budenheim, Dillingen, Voelklingen, Saarbrueken, and Neunkirchen.

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which have remained almost undamaged by contaminants so far, cause the question about the limits of the acceptable to become a matter of political conflict. Because although the FRG has continually lowered the maximum limits for air pollution, the air has not become substantially better. It still shortens the life expectancy of the city dweller by 2 to 3 years compared to that of people living in the country.

The Federal Ministry of the Interior is planning a further pronounced lowering of the amounts of contaminants which will be allowed to escape through the chimney stacks in the 1980's. A revision of the Federal Nuisance Protection Law is intended to ensure that nowhere in Germany will the air be worse than it is already. Exceptions may be made only if the Land government in question agrees to identify another "pollution-prone district."

The Laender which are governed by the CDU or CSU are opposed to this. Likewise SPD/FDP-governed North Rhine-Westphalia, the breathability of whose air is above all at issue. They are saying that whoever fixes the maximum values too low will make exceptions necessary, and will thus deepen the difference between polluted and unpolluted areas--thus violating the principle of equality guaranteed by the Constitution. But even these opponents of exceptions want to allow some exceptions, although not as an unpopular identifying of "pollution-prone districts." They have settled on the more voter-appealing designation of "clean air districts."

Hiding behind this farce about the most promising type of exception are rank interests. The new provisions would block new industrial settlements, if nowhere in Germany would the air be allowed to become even so much as 1 gram thicker. New coal power plants, for example, would be permitted to be built only in districts which were already pollution-burdened in any case. And even there only if the discharge from other air polluters were to be correspondingly reduced.

Another "dramatic rise" in air pollution--according to Federal Interior Minister Gerhart Baum--no longer needs to be feared. But 700 tons of sulfur dioxide are pouring forth every day from the chimney stacks in the area of Duisburg alone, where they combine with almost the same amount of dust and settle down heavily upon the bronchial tubes of the city dwellers. Year after year, the smokestacks of the FRG are continuing to blow 4 million tons of sulfur dioxide into the air, a rich mixture which can change into sulfuric acid and which can then seep into the ground along with the rain. Germany is acidifying.

Sulfur dioxide is generated above all in the coal power plants. To be sure, today there are techniques for reducing the discharge of this compound by 85 to 90 percent. The new coal power plants which are being built by the North Rhine-Westphalia Land government at Voerde and Scholven are--measured by their predecessors--almost paragons of

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cleanliness. But these predecessors continue to be in operation: Hundreds of small power plants which are producing a hundred times the environmental loading. They were built in the years 1950 to 1955, they have been written off long ago, and they are extremely profitable.

Meanwhile, the foresters are sounding the alarm. Because sulfur dioxide damages not only people--coniferous trees as well are dying off. If in all the Federal Laender there were as much filth in the air as is allowed by the law, there would be almost no coniferous forests left in Germany.

"In Duisburg, no conifers are growing any longer," laments the North Rhine-Westphalia health minister, Friedhelm Farthmann. But over half a million people live there. A human can tolerate more than coniferous trees can.

He is no doubt also more robust than the testimonials to his art. In 20 years, the approximately 25,000 irreplaceable stained-glass windows and other church windows in the FRG will be destroyed, unless they have been moved into the museums by that time. Buildings such as the Cologne Cathedral are crumbling in the hands of their conservators, in the acid air mixture of the city.

The breathtaking rise in private transport is more dangerous to health than all the other air pollutants. Cars create their filth where the air is breathed. The nitrogen oxides from automobile exhaust gases are polluting the air we breathe--in the cities, bronchitis and tonsil inflammations are multiplying. According to an investigation by the health ministry, three fourths of all the children in Dortmund have swollen lymph nodes as a consequence of the bad air.

Also gaining ground is carbon monoxide, that gas mixture emitted by the car's exhaust at the level of baby buggies. It collects in the canyons of the streets, being generated above all by slowly moving automobiles in congested traffic. Its concentration is twice as high in the interior of the vehicle as in the open air, because it is sucked up by the car's ventilation system from the vehicle creeping along ahead of it. This odorless gas, which produces dizziness, passes via the lungs into the blood, where it leads to headaches and impairs the circulation.

In this connection, technically it would be no problem today to decrease the proportion of contaminants in the auto exhaust gases by 90 percent. According to a study by Porsche AG on behalf of the Federal Environmental Office, a markedly decontaminated motor would be only DM 250 to 350 more expensive. Yet in the next 3 years, no such motor will be mass-produced. "We would like to cut back on the proportion of contaminants in the exhaust gases," laments Guenter Hartkopf, state secretary in the Federal Ministry of the Interior, "but we cannot do it!" Complicated rules of the European Community forbid unilateral environmental

injunctions by a member country, because they "distort the competition." Not until 1982 do the countries of the European Community expect to reach an agreement on a common norm. Until then, the bad air will know no limits. Since 1965, the production of carbon monoxide has risen because of the traffic, from 4 million tons to 6.4 million tons, whereas the proportion due to industry has remained about the same at 3.3 million tons. And instead of their former 8.9 million tons, households today are pouring out from their chimneys only 4 million tons.

Chimney stacks are among the most conspicuous measures for the prevention of air pollution, even if they are not among the most effective. To be sure, they make the most constructive contribution to the democratization of the filth. Factory smokestacks are being built so high by now that only seldom do the particulates fall in their immediate vicinity, but instead spread out uniformly over the countryside.

It is owing to the high smokestacks if the air is slowly getting better in the Ruhr district and slowly getting worse in the Black Forest. But conflict over the blue sky long ago ceased being a matter to be settled between the church spires of the separate electoral districts. In Sweden, the soils are acidifying, forests are withering away, and fish are dying, because sulfur dioxide from English smokestacks is raining down upon that land. The Netherlands is suffering in summer weather from the effects of the industrial exhaust gases from the Ruhr region.

Even the ordinary German consumer, with his keenness for spraying, is contributing to the crisis of the biosphere. With his unrestrained use of fluorocarbons in aerosol cans, he is doing battle not only against underarm wetness, aphids, and varnishing defects, but also against the paper-thin ozone layer which surrounds the globe.

Hair Spray and Deodorants Ensure the Skin Cancer of the Next Generation

Even if the Federal Government were to have followed the example of the United States, Canada, and Sweden and had banned the manufacturing of the destructive atomizers immediately--in the U. S. State of Oregon, since 1977 their sale has been punishable with imprisonment for up to a year--even if in all the Laender this propellant gas were wafted no longer into the air from one day to the next, the fluorocarbon residues already existing will remain about 20 years more in the ozone layer 20 kilometers above the earth.

According to calculations by American meteorologists, with further unchecked use, 15 percent of the ozone layer--which protects us from the ultraviolet radiation of the sun--will be destroyed over the long run. Scientists with the American Environmental Protection Agency predict an increase in skin cancer as a consequence of this--today already an occupational disease of sailors and farmers--by another 60 percent.

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And yet in the FRG, the evil spirit from the can continues to be on the market. Although the Federal interior minister awarded a prize in June 1979 to six ecologically safe spray cans, which henceforth are allowed to bear the International Environmental Protection symbol, for the time being 70,000 tons of fluorocarbons continue to be sprayed in Germany, and 350 million cans are being sold for personal hygiene and hair spraying alone, without the women realizing that for the sake of the proper set of their hairdos, they are gambling with the possibility that their children may develop skin cancer.

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